Improving the contribution of operating experience, performance monitoring and analysis, and lessons learned to integrated safety management
Session 3

Denny Ruddy, Chair

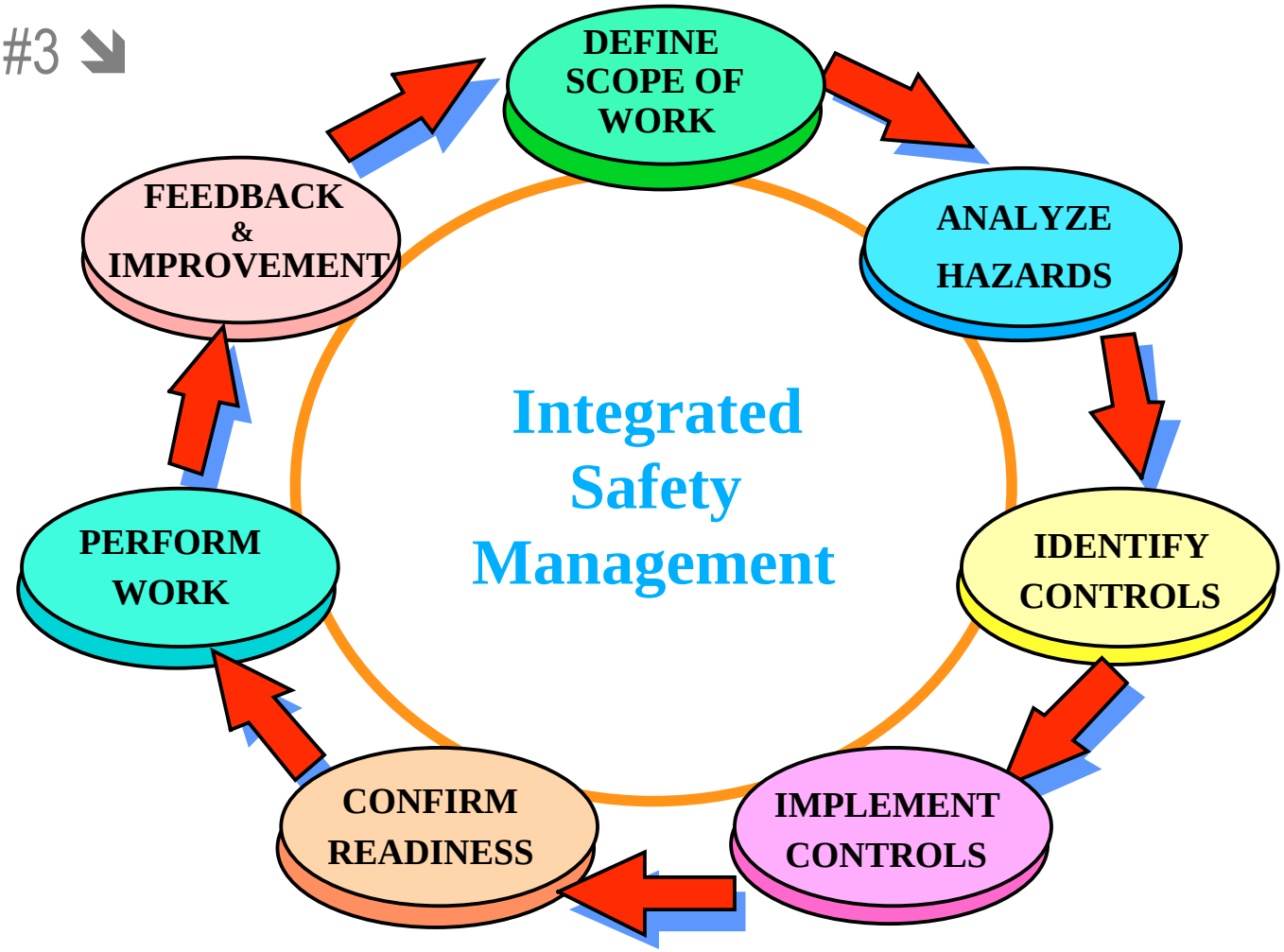
December 11, 2001

Breakout Session 3
Feedback for Improvement

- Panel Chair
  - Denny Ruddy, BWXT Pantex
- Panel Members
  - Everett Beckner, NA-10
  - Paul Golan, EM-1
  - Charles Shank, LBNL
  - Keith Christopher, OE-10
  - Bob Pedde, Westinghouse, SR

INTEGRATED SAFETY MANAGEMENT

Session #3 ↘



FEEDBACK FOR IMPROVEMENT

– AVAILABLE

– VISIBLE

– MEANINGFUL

SESSION ELEMENTS MATRIX

TOPICS	AVAILABLE	VISIBLE	MEANINGFUL
Metrics		**X**	**X**
Occurrence Reporting & Processing System (ORPS)	**X**		**X**
Best Practices	**X**		**X**
Corporate Problem Solving	**X**	**X**	**X**
Focus Management Attention		**X**	**X**
Others?			

FEEDBACK FOR IMPROVEMENT

- Performance Metrics – (How do we know how we are doing?)
- The Occurrence Reporting & Processing System (ORPS) – (How do we record what we are doing?)
- Best Practices – (Who gets it?)
- Corporate Problem Solving – (How do we play nice?)
- Focusing Management Attention – (We do what the boss inspects, not what the boss expects.)

OUR PROCESS

- Agenda / Time Constraints
- Topic Discussions
  - State the Objective per A,V,M
  - What do we have now – the gap
  - Potential solutions or actions (strawman)
  - Open discussion
- Cover Each Topic in Series
- Capture Ideas for Presentation
- Define Path Forward

Breakout Session 3
Feedback for Improvement
Agenda

2:30 – 2:45	**Setting The Stage**	**Denny Ruddy**
2:45 – 2:55	**Performance Metrics (How do we know how we are doing?)**	**Everet Beckner**
2:55 – 3:15	**Open Discussion / Comments**	
3:15 – 3:25	**Occurrence Reporting & Processing System (ORPS) (How do we record what we are doing?)**	**Paul Golan**
3:25 – 3:45	**Open Discussion / Comments**	
3:45 – 3:55	**Best Practices (Who gets it?)**	**Charles Shank**
3:55 – 4:15	**Open Discussion / Comments**	
4:15 – 4:25	**Corporate Problem Solving (How do we play nice?)**	**Keith Christopher**
4:25 – 4:45	**Open Discussion / Comments**	
4:45 – 4:55	**Focusing Management Attention (We do what the boss inspects, not what he expects.)**	**Bob Pedde**
4:55 – 5:15	**Open Discussion / Comments**	
5:15 – 5:30	**Now What…….**	**Denny Ruddy**

WHAT IS PREVENTING US FROM LEARNING?

Create an Environment Where We Learn…From our Best As Well As our Worst Experiences

- Is the organization capable of learning? How does the commercial nuclear industry learn?
- Where is the LEADERSHIP? How is leadership recruited, promoted, nurtured, and rewarded in this organization…what is the typical career path of a senior contractor or DOE manager. What should it be/look like?
- We generally don't believe we can learn from others…Not invented here was invented here
- What was the last book you read as it would relate to your career, and/or what was the last thing you learned (career-related) and how did you learn it?
- The carrot and the stick…how do you reward learning… and penalize stupidity

WHAT IS PREVENTING US FROM LEARNING?

We are drowning in data, but like a thirsty man in the ocean, the data is not really of any use to us. Develop predictable and reliable indicators that we will use

- We collect more data than we could ever actually ever use.
  - **ACTION:** Quick assessment of all the data that we collect
  - **ACTION:** If you, as a CEO/FOM had to manage your site where you only had access to 10 performance indicators (and NO others) what would they be?
- But we have poor instrumentation…we don't have a process that analyzes the data that can tell you something in a predictable and objective manner
- To heck with leading indicators…we don't even recognize the lagging data patterns that we have…all too often the DNFSB, OIG, PAAA, etc., are the first ones to call foul
- Therefore, we generally fly blind
  - **ACTION:** Collect what are the indicators that the Feds and contractors are paying attention to today
  - **ACTION**: Develop set of better indicators
  - **ACTION:** In ORPS, recast "cause-codes" to 5 ISM functions

WHAT IS PREVENTING US FROM LEARNING? Part II

Our behavior makes us want to make the problems go away quickly and silently

- We tend to lose much of the value of a lesson-learned generated by FEAR…what is causing this fear?
- This is especially true of the federal managers…even though there has been little consequences for the FM (when was the last time someone got terminated for cause)
- The usual lesson learned from our most serious mistakes is that "this cannot and will not happen again"…a noble goal, but unless you air this out and figure out why and then share that with the rest of the complex it CAN and WILL happen again (count on it)
- We have generally career government bureaucrats, usually technically smart people running our sites…not leaders with vision…If you don't agree, take this test…Describe for me in 2 minutes or less your vision of your site and how it fits into the program and into the department (take 80 seconds to think and 40 seconds to talk)
- Nobody usually intentionally screws up, but when we take an action we do it in a way that is usually pure penalty, rather than a penalty with a challenge to learn and improve

WHAT IS PREVENTING US FROM LEARNING? Part II

Professional discipline…we are swinging at the wrong pitches…we are taking strikes and going after balls out of the zone…and many times don't have any idea where the strike zone is.

- We are not effectively using all our tools to affect behavior and improve performance
- Better definition and understanding of the strike zone
- Unused leverage. **FOM**: What is your contractor's net profit on this contract, what is the profit projected from your site in their "plan," how would you rate the financial health of your contractor, and how is your contractor president rewarded (his or her corporate performance metrics)? You don't think you need to know this? Well THINK again.
- B.6, or other contract provisions, are not being used a effective tools…a little medicine when the patient is a little ill
    - ACTION: Ask the contractors: what are the things that are creating a disincentive, where is there marginal value-added (not neutral), and what are the things that would super-charge the system in a positive way.
    - ACTION: Find examples where *early intervention* was successful…and share that experience

WHAT IS PREVENTING US FROM LEARNING? Part II

Professional discipline…we are swinging at the wrong pitches…we are taking strikes and going after balls out of the zone…and many times don't have any idea where the strike zone is.

- Oversight…we usually either overkill (dozens of people looking at one thing) or miss the boat entirely (no one has looked into a issue in years)
- How clear is the Federal oversight function as it applies to a site specified by the contract
- Contractor reputation
- Subjective performance evaluation in this area is foolish, ridiculous, and takes way rather than add value
    - **ACTION:** Search out all the subjective performance elements in our contracts and kill them…this is not 1995, its 2001 and we should have evolved
    - **ACTION:** Look at all the places our contract tells the contractor HOW and change that to say WHAT is it we want and WHEN it is expected…
    - **ACTION:** How would our contracts look if they were patterned after the 5 core functions if ISM

WHAT IS PREVENTING US FROM LEARNING? Part II

ORPS is seriously outdated and not used as a tool to help manage the site…rather it is viewed as a non-value added requirement

- Even the names of the facilities reflect missions that were terminated over 10 years ago (B707 Plutonium Pyrochemical and Fabrication)…we are starting with garbage
- The "incident report" that the nuclear navy used was very successful…was it because of the process or the infrastructure (or both)? The Chief of Naval Reactors (NR-1) read each and every incident report (for a Navy that had over 90 operating nuclear powered ships and boats)
- What is the average highest level they are reviewed in DOE?
    - **ACTION**: Compare NR incident reports to ORPS…can and should we use it?
- On average an operating ship/boat had one reportable incident per month…that was a combination of fewer things going wrong (better infrastructure) and focus on more significant events so one did not get lost in the weeds
- Great care was taken in the preparation and dissemination of those reports and heaven help the ship that made the same mistake that another one recently made.
- Does anyone read or learn anything from ORPS system, other than one wants to limit interaction

Corporate Problem Solving

Objectives

- A process that effectively identifies and resolves broad safety issues across the DOE Complex before these result in significant events or re-occurrences.
- An open, seamless and no fault process that allows the free flow of information and knowledge across both organizational and company lines.

Feedback & Improvement

Corporate Problem Solving (cont.)

Attributes of Successful Solution

- Available
  - To Contractors, Local DOE and DOE Headquarters
- Visible
  - Visible at DOE Headquarters and Sites
- Meaningful
  - Captures Significant Generic Issues.
  - Consistently Resolves Critical Issues in a Timely and Effective Manner.
  - Collaborative Effort of All Contractors and DOE Groups.
  - Credible Process Tied to ISM.

Feedback & Improvement

Corporate Problem Solving – (cont.)

What We Have Now/The Gap

- Localized Solutions vs. Corporate.
- Some Identification of Selected Issues by Central Review of Occurrence Reports.
- Some Issues Mandated by Corporate (explosive hazards safety review), but Often w/o Corporate Solution.
- Field Offices and Contractors Don’t Own Issues Imposed By Headquarters (Divisive)

Feedback & Improvement

Corporate Problem Solving – (cont.)

What We Have Now/The Gap (cont.)

- Competing Contractors, w/o Counterbalancing Incentives.
- Local Focus by Field Office.
- No Established Process to Flow Potential Issues to a Corporate Entity.
- No Comprehensive Cross-Cutting Reviews.
- Some Isolated Examples of Corporate Approach:
  - PAAA Program (Coordinators, Web site, Program Reviews, etc.)
  - EFCOG Subgroups

Feedback & Improvement

Corporate Problem Solving – (cont.)

Potential Solutions

- Modify Contract Incentives – Attribute on Identification and Resolution of Generic Safety Issues
- Establish Corporate Screening/Resolution Entity
  - Reviews Candidate Generic Issues, Recommend Resolution.
  - Includes Contractor & DOE Field Representation.
  - Ensures Contractor & DOE Field Review of Proposed Resolution

Feedback & Improvement

Corporate Problem Solving – (cont.)

Potential Solutions (cont.)

- Maintain Balance Between Safety and Production
- Restructure ORPS to Support ISM Issue Identification
- Corporate Decision and Mandate (with Specific Actions and Dates)

Feedback & Improvement

Corporate Problem Solving – (cont.)

Open Discussion

- Any comments on the objective?
- Any comments on what we have now or the gap?
- Any comments/suggestions on potential solutions?

Feedback & Improvement

Objective

To implement a simple set of standard performance indicators for use by Contractors and DOE field and headquarters which:

- ✓ **Is timely and consistent.**
- ✓ **Provides key performance information at a glance.**
- ✓ **Depicts trends versus events.**
- ✓ **Allows "drill down" to identify issues/actions.**

Current Situation

Voluminous performance indicators and metrics are available across the complex. However, there is no standard utilization, format, content, etc.

Potential Solution - Color Rating System

History

- Institute of Nuclear Power Operations (INPO) key performance indications established post TMI
  - Vital element of industry improvement initiative
  - Leading and following indicators
  - Includes analysis and action section
- Color roll-up developed by utilities
  - Quick status summary (utility, NRC, and INPO)
  - Easy assessment of trends
  - Sharing of expertise/knowledge

Potential Solution - Color Rating System

- Washington Government Group Experience
  - Diversity of business units
    - Challenge for consistent/useful parameters
    - Analogous to DOE Complex
  - Built system based on utility experience
    - Cross-cutting subject matter experts
    - Standard description and rollup algorithms developed
    - Pilot to production

Color Values and Definitions

G ***Excellence/Significant***

Strength: where performance exhibits a significant strength, such as industry top quartile performance or achievement of longer term goals

W ***Satisfactory/Normal***

Satisfactory Performance: at/above the industry average or the annual goal, with stable or improving trend over several periods.

Y ***Tracking to Satisfactory***

Needs Improvement: where performance needs improvement and management attention. Performance may be achieving goal, but showing a negative trend over several periods that, if continued, will challenge goal achievement.

R ***Unsatisfactory/Significant***

Weakness: where performance is significantly below the goal and not showing an improving trend, or where the annual goal achievement is not expected.

B ***No Data***

This performance measure did not have data to report for this time period

NA ***Not Applicable***

Performance Summary Example

Focus Area	Level I																							
W W W W	W G G W		Y Y W W		R R Y Y		W W W W		G G G G															
Safety and Security W	Industrial Safety G		Emergency Services and Fire Protection W		Rad Contamination and Control Y		Nuclear Safety W		Physical Security G															
W Y Y R	W W Y R		G W W W		W Y Y Y		G W G W		G G G W		W Y Y R													
Tech Capability and Performance R	Production R		Infrastructure Y		Waste Inventory Reduction Y		Disciplined Operations W		Technical Qualifications Y		Engineering R													
W G W W	G G W W		W W Y Y		Y Y Y Y		W W W W		Y W Y Y															
Community, State and Regulatory Relationships W	Environmental Compliance G		CAB Responsive-ness G		Public Participation Program Y		Public Perception W		Employee Relations W															
W W W G	G G G W		W G W G		G W G G		W B B B		W W W W		G G G G		W W W W		G G G G							
Cost Effectiveness G	Financial Forecasts W		PBI Performance G		AOP Milestones G		PACE B		Project Management W		Financial Performance G		Feedback and Improvement W		Other Key Indicators G							
Y W W W	Y Y Y Y		G G G G		W W W W		Y W G G		Y Y W W															
Corporate Perspective Y	Nuclear Proliferation Y		DP Integration G		EM Integration W		Strategic Planning Implement. Y		Internal Team Integration Y															

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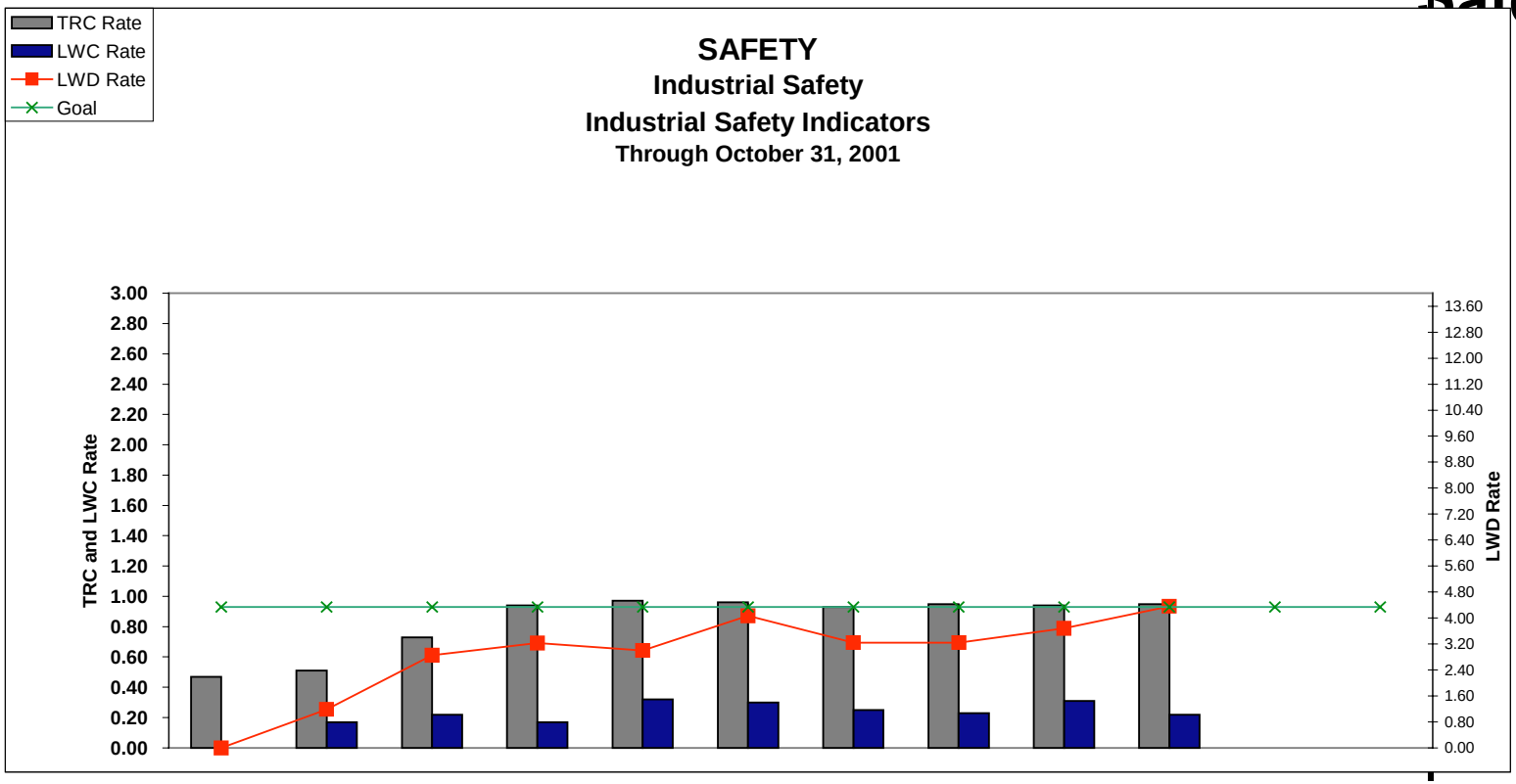
Performance Indicators Example

Focus Area	Level 1	Level 2			
W W W W **Safety and Security** W	W G G W Industrial Safety and Health G	W W W W TRC Rate W	W G G W LWC Rate G	G G G G LWD G	
	Y Y W W Emergency Services and Fire Protection W	Y Y Y Y Fire Protection Impairment Status Y	Y Y W W Emergency Management EPHA Annual Review/Revision W	W W W W Emergency Management Corrective Actions W	G G G G Emergency Exercises and Drills Conducted Vs. Scheduled G
	R R Y Y Radiation Contamination and Control Y	W W Y Y Reportable Dose Exceedances W	R R Y Y Reportable Contamination R		
	W W W W Nuclear Safety W	W W W W Nuclear Safety Issue Management Index W	G G G G Significant Nuclear Safety Incidents Index G	Y Y W W Authorization Basis Document Management Index W	
	G G G G Physical Security G	G G G G Security Incidents G			



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Data												
TRC Rate	0.47	0.51	0.73	0.94	0.97	0.96	0.93	0.95	0.94	0.95		
	Green	Green	Green	White	White	White	White	White	White	White		
LWC Rate	0.00	0.17	0.22	0.17	0.32	0.30	0.25	0.23	0.31	0.22		
	Green	Green	Green	Green	Green	White	Green	Green	White	Green		
LWD Rate	0.00	1.19	2.85	3.23	3.00	4.07	3.24	3.24	3.68	4.36		
Score	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green		

Definition

The Occupational Safety and Health Act of 1970 requires covered employees to prepare and maintain records of occupational injuries and illnesses. WSRC measures safety performance in accordance with these guidelines. The incidence rates are calculated by multiplying the number of injuries, illnesses or lost workdays by 200,000 and dividing by the total number of work hours.

Goal - Monthly Rates are cumulative

TRC Rate = 0.93	Green	> 5% below the goal
LWD Rate = 12.87	White	0-4% below the goal
LWC Rate = 0.30	Yellow	0-4 % above the goal
	Red	>5% above the goal

Analysis / Action

TRC is White and LWC and LWD are Green. Before the incidents in October, WSRC was approaching the established goals for 2001. Using the site's Lessons Learned program, information from these four incidents will be communicated to all site employees. Since the previous injury rate indicated that the Behavior Based Safety process was having a positive impact on the site's overall safety performance, each site department and section will have additional BBS training during the monthly safety meeting. Management will also continue to monitor safety during its weekly staff meetings.

Comments

WSRC combined Total Recordable Case (TRC) Rate, Lost Workday Case (LWC) Rate and Lost Workdays (LWD) Rate for this metric. Stoplight definition and goals are more aggressive than Corporate.

SME Manager: Kevin Smith (803-952-9924) SME: Linda Blackston (803-952-9905)

Proposed Health of ISMS

Focus Area	Level 1	Level 2					
ISMS	Safety Culture Index	TRC Rate	Cost Index	Behavior Based Safety Index			
	Regulatory Performance Index	Reportable Environmental Events	Disciplined Operations Index	Nuclear Criticality	Safeguards and Security Index		
	Program Implemenataion Index	Public Dose	Worker Dose	Pollution Prevention Index	Corrective Action Index	Self-Assessment Index	Ratio of Preventive to Total Maintenance

Potential Pros and Cons

Pros

- Meets stated objectives.
- Expectations established via range versus event.
- Cost savings (improvement not required if within range).

Cons

- Will be used as a “hammer” in fee determinations.
- Data may generate more questions/ analysis/ reports.
- Will be used to compare company performance where business/sites may not be comparable.